

Educating the Net Generation

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Diana G. Oblinger and James L. Oblinger, Editors



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Educating the Net Generation

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Support Services for the Net Generation

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Introduction

Traditional-age first-year freshmen entering college in the fall of 2005 were most likely born in 1987 when the information age was well under way. These students, known as the Net Generation, have grown up in an environment significantly different from the one most higher education faculty, staff, and administrators experienced during their developmental years. Many characteristics of the Net Generation have been described in other chapters of this book.

One of the most striking generational differences is that access to and use of technology is simply assumed by today's learners. Technology is invisible and intuitive; students don't "learn technology," nor do they think of it as separate from the activities it enables. For the Net Generation, just as television sets have "always" been in color with a remote control and a cable or satellite connection, the delivery of services has "always" been available on the Web or other relevant technology. Because of their background, the Net Generation has adopted a different set of premises and expectations that call for new—and sometimes challenging—responses from the academy.

Some have described changing colleges and universities as akin to turning an aircraft carrier. Unlike a small pleasure boat that can maneuver quickly and change course rapidly, the aircraft carrier requires a carefully planned maneuver and a large berth to complete its turn. While information technology has had a significant impact on the Net Generation, practices and expectations within the academy remain relatively unchanged. Classes continue to be taught by instructors in classrooms. Students are expected to navigate complex administrative processes. In many ways, the academy continues to be staff centric. Although some colleges and universities have demonstrated measurable progress in mov-

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ing toward a student-centered philosophy, many have not. Their administrative structure, information systems, and approach to the delivery of student services continue to represent the traditional hierarchy experienced by previous generations of students.

Nevertheless, the academy is changing. In addition to the Net Generation, external forces are influencing higher education.

- ▶ Tuition increases are exceeding standard measures of inflation due to the escalating fixed costs of health insurance for employees, utility costs for buildings, and competitive salaries.
- ▶ The growing belief that the cost of a college education should be paid for by students, not taxpayers, has shifted the balance and delivery of federal student aid programs.
- ▶ A recent Supreme Court decision in a case involving admissions at the University of Michigan prompted a national examination of both admission and financial aid practices.
- ▶ The Y2K phenomenon resulted in great angst among system administrators, often driving the replacement of administrative information systems.
- ▶ The rise of for-profit educational institutions has begun to change the delivery of both online and on-campus courses, as well as associated services.
- ▶ The rise of personal identity theft has forced colleges and universities to rethink their use of the Social Security number as the primary record identifier.

Such environmental changes have caused the academy to examine its policies, practices, and more importantly, the application of information systems to create more efficient operations and more effective student services.

Students as Consumers

The Net Generation expects good customer service. To many in higher education, using the term *customer* or *consumer* in the same sentence as *student* is akin to blasphemy. Yet, the Net Generation was raised in a customer-service culture. Today's students often exhibit less altruistic goals compared to past generations—they're primarily concerned with how their degree will affect lifelong salary potential and quality of life. In a very practical way, students want to see a relationship between the cost of their education and the delivery of quality services. For example, many institutions impose a required fee for information technology (IT) services. Students ask whether they are receiving the service for which they are required to pay—a reasonable question from the perspective of a consumer.

The Net Generation brings a special flavor of consumerism to basic student services. Three generations ago, the model for registering students was to conduct an “arena registration.” Most, if not all, academic administrators packed their offices and moved to the campus convocation hall, invited each student to report to the registration site at a designated time, and proceeded to match the student with courses. While some have argued that this approach was reasonably efficient, few have asserted that it was an effective mode of delivering this critically important student service. The introduction of voice-response touch-tone telephone technology in the mid-1980s and the emergence of Web-based registration services in the early 1990s have typically replaced the arena-registration approach. It would be an interesting social experiment to require Net Geners to leave the convenience of anytime, anyplace registration to return to the arena-style registration.

Crossing Organizational Boundaries

The Net Generation expects their problems to be solved—quickly and easily. Students are not intimidated by titles such as registrar and bursar. The actual process of registering for courses extends over many campus offices—academic advising, student aid, registration, student accounts, and often ancillary units that handle items such as student ID cards or health services. The process of applying for and receiving student aid is complex, involving federal and state regulations as well as a myriad of grant and loan programs. The student’s ability to succeed academically and graduate involves working with numerous offices, faculty, staff, policies, and procedures. While employees often know the institution’s administrative structure, students generally do not.

During the arena-registration era, these services were typically integrated through a predetermined set of signatures on student-processing forms. The intention was for students to meet with the appropriate student services personnel to ensure they would be properly advised and guided. When seen from the student perspective, more often than not this approach was an exercise in collecting a sufficient number of signatures from departmental assistants. A staff member in some obscure office would complete the requested transaction.

In the past decade, colleges and universities have improved the integration of student services through a “one stop” model. Common characteristics of this interorganizational approach are the physical construction of a student services center that houses all appropriate student services offices and staff, as well as a student services desk staffed by trained student services personnel. In spirit, such

a response is an improvement over the approach used during the arena-registration era; however, in practice this approach has serious limitations that stand in the way of true integration. It is expensive to build new buildings or to renovate existing buildings to physically establish a student service center. Complete integration of all students services into a single job description is not realistic—there is simply too much to learn, and such positions are generally delegated to the most junior staff.

Rather than this brick-and-mortar approach to improving and integrating the delivery of student services, a more robust approach is to capitalize on the power of information technology. Creating a seamless virtual organization specifically commissioned to exceeding the expectations of today's Net Generation students is a reachable objective.

It's Not About Technology

The Net Generation cares about the activity technology enables, not the technology, per se. The use of technology to improve student services will be critical to the academy. Yet, it's not about technology. Technology is a tool—it represents the means, not the desired outcome. Students will use technology; in fact, they will expect services delivered through technology. But before focusing on technology, student service professionals must articulate a clear and unambiguous vision that provides the framework for the technology. IT staff are important contributors to the desired outcome and must be part of the process; however, the leadership for improved student services should not be expected to come from within the technology ranks. Rather, it must come from those charged with advising and registering students, administering student aid, admitting students, collecting tuition and fees, and so on.

IT Supports Rather than Leads

Since every college and university is uniquely structured, specific student service offices vary in title and function. At the University of Kansas, the student affairs organization is called Student Success. During the past decade, offices or divisions of enrollment management have become common titles. Traditionally, titles such as registrar, admissions, student aid, student accounts, student affairs, and housing all identify units responsible for the delivery of specific student services. The availability and adoption of technology-driven applications does not change the focus or responsibility of these business units.

The units responsible for student services will not change, but their staffing levels, knowledge, and approach to the delivery of services will. Even though senior administrators anticipate staff reductions because of technology, in practice this is rarely the outcome. While administrative positions may decrease, typically the number of IT positions increases. In many cases, the growth of IT positions occurs in both the central IT support office and the business units. IT becomes part of almost everyone's position; the remaining business unit nontechnical staff need to understand the new technological solutions and acquire new skills.

The institution's business units are faced with new issues as technology-based services grow. For example, properly developed Web applications should enable users to contact a business specialist if they encounter problems or have questions. Such questions are often e-mailed to a business unit drop box. It becomes imperative that the business unit has a plan to receive, read, and reply to this steady stream of incoming e-mail messages. Net Gen students are more inclined to e-mail requests than to ask for advice in person. In many cases, the business unit must reorganize its staff to shift from receiving walk-in traffic to replying to e-mail.

Another common change to staffing patterns within the business unit is to ensure the ability to "see what the student sees." Given the typical design architecture of secure Web services, only the designated individual (student) may access and modify his or her personal record. The staff member within the business unit may have the organizational authority to access and modify the student's record, but the technology may prevent staff access.

As student services are developed, they must continue to be the responsibility of the business unit. It can be tempting to rely on the IT staff when problems arise or when a student challenges the process or results. Similarly, technologists might want to assume responsibility for the business process because they "own" the hardware that stores the data and the business logic. Both of these approaches are inappropriate: the business unit must retain primary ownership of the process and the delivery of its set of student services, and the IT department should focus on infrastructure support issues such as networking, security, database management, backup and recovery, and other global issues.

For Both the Net Generation and Nontraditional Learners

Students want customized and personalized services, not a one-size-fits-all approach. There is little question that the Net Generation has expectations that

are more encompassing, and perhaps more demanding, than those of previous generations. At the same time, the landscape of higher education is changing in other ways. For example, the number of adult learners continues to increase at many colleges and universities.

Adult learners have a different set of support needs compared to Net Geners. Beyond the obvious difference of age and time away from the classroom, adult learners may not have the same comfort level or familiarity with technology—and they may be the least advised on how to use it.

The difference in populations places a challenge on service developers to ensure that all students have equal access to services, which may require extended support to adult learners in order for them to gain a working knowledge of the systems and supporting tools (campus IT account, classroom management systems, Web services, e-commerce). Serving adult learners might also require that student services continue to be delivered in an in-person, synchronous manner. The simple caution is that when it comes to the deployment of technology-based solutions to students, a one-size-fits-all solution may not be appropriate.

Technology as a Transformational Tool

For the Net Generation, quality of service matters. This requires more than automation; it requires transformation. Perhaps the single most interesting challenge to college and university administrators responsible for delivering student support services is the role technology plays in transforming the delivery of these services. While it is not about technology, it is about a symbiotic relationship between a basic need and the technology that delivers a response to that need.

A prime example of how technology has transformed basic student services is the National Student Clearinghouse. A decade ago, there was a three-way exchange of paper documents between an enrolled student, the institution, and the financial lender. The lender required proof of enrollment for the student to retain a nonrepayment status on the loan. The student would receive a document from the lender for completion by the institution; the school would receive the document from the student, complete it, and return it to either the student or the lender. This process was inconvenient for the student, time-consuming for the institution, and difficult to schedule for the lender.

Technology enabled a transformation that is much better suited to Net Geners—or any busy student, regardless of age. Through the establishment of a central repository, colleges and universities can transfer the pertinent data to the

clearinghouse; the lending institutions now make their enrollment status inquiries against this repository. The clearinghouse increased effectiveness for students and improved efficiencies for both lenders and institutions.

In this example, the goal—validation of student enrollment to ensure continuance of student aid borrower status—did not change. What changed significantly were the processes employed to achieve this outcome. Shifting from a manual to an automated system established new research capabilities and eliminated lost or misplaced documents and resulting delays or duplicate effort.

Pennsylvania State University's recent modification of placement testing for new students offers another example of using technology to transform processes. The purpose of administering a placement test (for example, in English, chemistry, or mathematics) is to ensure that students start these courses at the proper level. Some students are academically prepared for college-level work, some need remediation, and others are ready for more advanced levels.

Traditionally, students were invited to campus during the summer before their first year of study. The placement test was administered; the student was notified of the result. Traveling to campus to take the placement test was often an inconvenience (or impossibility). Participation was lower than desired, and timely feedback was impossible due to test grading. The process did not meet the Net Generation's need for convenience, customization, and immediate feedback. Thanks to technology, these placement tests are now administered through secure Web applications. Students can take these tests at their convenience and at their location. Although these are placement-level tests, not exams for academic credit, student cheating on these examinations was nevertheless a concern; however, the examination of placement recommendations compared to actual performance in the enrolled course of both pre- and post-Web populations indicates that cheating has not occurred. The unexpected, but positive, student response has been a feeling of trust. Many students have commented on their genuine appreciation that the university demonstrated trust early by allowing them to take these placement tests unmonitored.

Technology can also transform business processes by enabling them to become more efficient, effective, and student focused. Consider the process of informing students and their advisers of the courses that will be available for registration the upcoming semester. Traditionally, Penn State printed a booklet each semester containing timetables of course offerings, course descriptions, registration instructions, and other pertinent enrollment information. These booklets were

prepared well in advance of the semester, and subsequent course changes were either unpublicized or a supplement was printed.

Through technology, this process changed in ways that are responsive to the Net Generation. The information is published on the Web rather than on paper. Rather than a one-time publication, the schedule is updated and republished in real time. The Web allows for the inclusion of additional information that was impossible in the paper format. Faculty can link to their course syllabus, the registrar can link to characteristics of the classroom and the course, and academic departments can link to descriptions that exceed the typical 30-word limit for course catalogs. In short, technology has enabled institutions to respond to student expectations in ways that were impossible before.

Interrelationship of Service and Technology

The Net Gen expects convenient, safe, reliable, and flexible access. While the development of student services is not about technology, the support of today's extended and accessible services would be impossible without the presence of a robust technology infrastructure. Conceptually, there is a clear distinction between application development and the "system" that allows these services to be delivered. In reality, the two issues are tightly coupled.

The constant and rapidly changing nature of technology requires those developing support services for the Net Generation to be aware of both the current technology boundaries and the emerging promises. The following examples illustrate this important interconnectedness between the service and the technology used to deliver it.

- ▶ **Occasionally lateral steps that do not improve the nature of the service are required due to the shifting technology at the core of the process.** The half-life of software and hardware continues to decline; the period of time from acquisition to obsolescence keeps getting shorter. The latest laptop, desktop, or midtier server purchased today will likely be improved by the manufacturer within a year. The resulting machine will be less expensive (all other attributes held constant) with greater performance capabilities. While this does not necessarily make the original purchase an inappropriate decision, it does provide a warning that within a few years hardware or software may need to be replaced. Constant, escalating change has a direct impact on student services.

▶ **Inappropriate uses of technology require that developers take a defensive posture to ensure the integrity and stability of their services.**

Unfortunately, these preventive steps are expensive and represent a diversion of time and money from the business at hand—supporting our constituencies. As the adoption of Web-based services continues to expand, we are also experiencing the dark side of innovation—using technology to promote fraudulent services or disrupt legitimate services. The number and severity of Internet-spread viruses are on the rise, as are instances of fraudulent services that result in identity theft or credit card fraud. In direct response, many colleges and universities are expending huge resources to migrate away from using the Social Security number as the primary identifier for students, faculty, and staff. Within the higher education sector, the number of diploma-mill operations is on the rise.

▶ **A reliable, fast, and secure network—both wired and wireless—is necessary to deliver the developed support services.**

Another critical infrastructure issue is networking. During the past decade, colleges and universities spent enormous sums of money wiring their campuses. The goal was to connect every residence hall room, classroom, and faculty office to the Internet. With much of this accomplished, these same institutions are now investing heavily in wireless networks. Although needed, these expenditures divert investment from new support services. In addition, they represent an ongoing commitment to maintenance and necessary upgrades.

▶ **The preferred solution, from a number of perspectives, is integrated and full-service support services.**

As the number and extent of support services continue to grow, students want the university to provide a complete, full-service approach. Those who pay fees, as students do, expect services and convenience. These expectations result in the need to provide the infrastructure for e-commerce applications, for example.

▶ **Support services must be reliable, consistent, and available.**

Mistakes happen and hardware fails; as a result, data recovery and system recovery are important. Files or databases may be accidentally destroyed. A virus may penetrate the security perimeter and cause damage. A failed hard drive might result in the inability to access a file. Whatever the root cause, there must be a data backup service so that critical information is not lost permanently. Institutions also need to consider their ability to recover from a larger disaster—fire, hurricane, earthquake, terrorist attack, and so on. Disaster recovery represents yet another necessary diversion of resources from support

service development. Without a robust and reliable technology infrastructure, however, the services cannot be delivered.

So, while not about technology, higher education cannot ignore technology support issues; they are critical as strategic services are developed for our constituents.

Integration, Opportunity, and Service

The Net Generation wants integrated and convenient services. Technology has the power to integrate the delivery of support services, create new opportunities, and deliver world-class levels of service. Many colleges and universities now use the Web to organize, present, and deliver support services. The University of Michigan provides services through Wolverine Access. At the University of Texas, students access UT Direct. The University of Minnesota delivers services through One Stop, and the University of Maryland uses Testudo. At Penn State, students, faculty, and academic advisers use eLion (<https://elion.oas.psu.edu/>).

Overview of the Penn State eLion System

In the early 1990s, Penn State received an increasing number of student complaints that the academic advising system was lacking. Students felt they were not receiving good advice; many were not assigned an adviser, and assigned advisers were not available when needed. Students claimed that rather than seeking assistance from their advisers, they would turn to other students, friends, or parents for academic advice. The administration responded to these complaints by committing to improve the quality and accessibility of academic advising.

A cross-functional team was formed with representatives from key offices—academic advising, the registrar, and several colleges. Their charge was to develop an expert-based, empirically grounded advising and information system, delivered by the latest technologies, to supplement the student-adviser relationship and engage students in inquiry for informed educational planning.

This charge was not about technology. It was about the development of a set of services that would improve student success. Technology would simply be the delivery vehicle. As the work of the team progressed, the following developmental principles emerged:

- ▶ **Expert interactive advising**—Use the knowledge base of the university's best academic advisers to develop an expert system to extend this knowledge to the full array of students seeking advice.

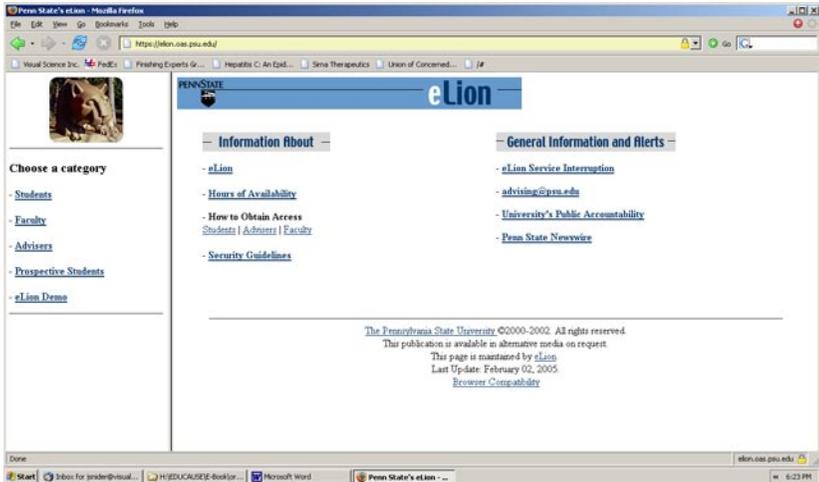
- ▶ **Direct service to consumers**—Use of the services would not require an administrative staff member's involvement.
- ▶ **Personalized to the student**—The services would be student specific, based on the student's academic record and affiliations. The system would not use generalities to convey information and advice.
- ▶ **Secure Web-based delivery**—Accessibility would not be limited by place or time. Any student with access to the Web would have access to these services at any time.
- ▶ **Multiple development teams**—To grow the system as rapidly as possible, concurrent development teams were established to design, test, and implement specific services. These teams were sponsored by the primary business units (registrar, student aid, bursar, and academic advising) responsible for the support services.
- ▶ **Standards based**—By necessity, a multiple development team environment required both presentation and technical standards to ensure the end user experienced a seamless set of services.

Eliminating the Stovepipe Approach to Student Services

This developmental approach dramatically changed Penn State's overall design of support services both for eLion and more general services. While each application is owned by a business unit, all applications are branded eLion (see Figure 1); there is no attribution to the specific office that developed the application. From a student perspective, application ownership does not matter; what matters is that the service is fulfilling a need.

The early internal challenge, and to some extent a continuing one, was for the developers to think about a service from the student perspective rather than their own internal administrative perspective. For example, a student might not have been able to complete registration due to a delayed scholarship. This same student may be living in a residence hall and involved with a student organization. From the student's perspective, one issue cut across several administrative offices. One of the intended outcomes was for the developmental staff to think in a more horizontal mode—as a student would solve a problem—and not in a vertical, stovepipe mode. The approach has worked. When enrolled students were asked about their use of technology, they responded that their most often used application was e-mail; a very close second was eLion. The popularity of eLion is due to the services it provides—services students need.

Figure 1. Screen Shot of the eLion Interface



Leadership and Vision

The development of the Penn State eLion system did not follow a traditional development pattern; the development efforts were intentionally decentralized across many offices, and the project leadership was highly integrated through the use of collaborative teams. The system was not the result of incremental planning or change but of a strategic decision. The evolution of systems within colleges and universities is often driven by external forces. The articulated need at Penn State was to improve academic advising services; however, there was no specific vision of how to accomplish this. Through the creative and collaborative efforts of staff in leadership roles, the early model and design of eLion emerged.

The first models were virtual prototypes that described the intended function and result. The models were presented to senior university administrators who allocated development funds (\$50,000) to pursue the creation of a prototype. These funds were used to provide training for existing staff and to purchase specialized software. Following a successful proof-of-concept demonstration, several teams were organized. One was responsible for the design of application standards and presentation techniques. Two additional teams were tasked with the development of the first student service applications. A fourth team focused on technical architecture requirements.

For the first three years, progress was slow. During this time, Penn State leadership remained committed to the original vision and provided the fiscal and emotional support needed to keep the project moving forward. Today's system would not have been possible without this strong, top-down support and without a clear vision from the project team itself.

Disciplined Development

An important part of the vision was to provide a set of services that would quickly scale to a very large (100,000+) population of users, which required that the system be standards based, uniform, self-documenting, and reliable. Further, users needed to be able to offer comments and suggestions and receive personalized help.

A standards document (see https://elion.oas.psu.edu/governance/eLionGov_9.pdf) was developed to provide guidance to all eLion developers. This document includes information on how to create a new application or modify an existing one, Web standards, and technical standards, as well as general information about the structure and governance of the eLion initiative.

Each eLion application has internal help documentation for users. Because the system is secure, a demonstration service provides a nonauthenticated view of typical applications. A statement in the standard footer of each page indicates that the page is maintained by eLion. Behind this link is a page-specific e-mail address that routes questions or inquiries to the appropriate developer.

Applications are also designed to be self-documenting. This is a difficult challenge, since every user is unique (personal background, Web familiarity, comfort level with technology). Nevertheless, the goal has been to design all applications so that specialized training, documentation manuals, and staff involvement are not required.

Politics, Tradition, and Turf

The Net Generation's expectation is for immediacy; they don't understand why colleges are slow to change. Perhaps the most challenging issue in developing enhanced student support services has to do with the campus administrative climate. Ideally, there would be unanimous agreement regarding the services that are needed, how they should be deployed, and the support plan necessary to keep them robust and relevant. In reality, multiple issues and perspectives on campus do not converge into a single vision. One colleague described this effort as attempting to herd cats. Another described this management issue as akin to

managing a cemetery—a lot of people are involved, but there's not much movement. Whatever the analogy, an administrative climate must be established that provides an enabling environment, focused on the academic support that fosters student success. Students do not attend an institution because it has the best registration system or the most complete self-service Web system. Rather, they attend because of the quality of academic programs, the reputation of faculty, and the perceived value of their degrees. While registration systems and other administrative applications are essential, they are secondary compared to the fundamental academic objective.

As stated earlier, establishing this climate is not about technology. More likely, it is about the on-campus political environment, institutional tradition, and the perception of whose turf is being violated. The decision to develop technology-delivered student services should be both a top-down and bottom-up decision. The initiative must be supported by the institution's leadership to move in this direction. Fiscal support will also be needed to keep this initiative alive, as well as support, at times, to defend fundamental change. Many campus organizations will likely be involved, so establishing and promoting cross-functional project teams becomes critical.

Similarly, the initiative must have bottom-up support. What specific services or array of services will improve student satisfaction, academic retention, and administrative efficiency? The project objectives must be complementary and lead to a seamless, logical, and integrated set of services.

Beyond the campus political climate, tradition is an important factor in the development of student services. A classic argument is that if registration procedures are automated, the computer will replace the adviser, the quality of the advising system will decline, and students will make uninformed choices. Developing eLion challenged this traditional hierarchy. Does the adviser's signature on a student action form represent permission or consultation? Is it reasonable to conclude that all faculty advisers are fully aware of institutional policies and procedures? Do students know the name of their academic adviser? Is the adviser available for consultation? These questions must be addressed because they challenge traditional processes and assumptions.

Integration Depends on the Organization

During the past decade, higher education has sought to become more student centered. One of the manifestations has been the establishment of one-stop

student service centers that combine the front desks of multiple offices. The intention behind such centers has been to reduce the hassle for students and provide one comprehensive service center. This approach has met with varying degrees of success. In most cases it has required the construction—or extensive remodeling—of physical space, administrative reorganization, cross-training of staff, and a cultural change. Penn State and others have bypassed this physical approach and have concentrated instead on a virtual student service center. The virtual approach, exemplified by eLion, provides a richer opportunity to integrate services and allows greater extensibility by time and distance. This approach, however, requires a strong IT infrastructure.

Where does the institutional decision regarding support service reside, and what are the implications of implementation? Should the top-down approach prevail to ensure an integrated and systematic enterprise-wide approach to the development of student services? Should this initiative be championed by the chief academic officer, the IT director, student affairs, enrollment management, business services, or another senior executive? What role should the current IT organization play? Should existing campus information systems be retooled, should the mainframe be unplugged, or should an enterprise system be installed? Or, should the entire IT operation be outsourced to an independent third party? These questions require a careful and open analysis. The answer will depend on the institution and a series of factors.

One of the leading factors will be the institution's ability to attract and retain a qualified IT workforce. In recent years, the supply and demand for IT professionals has become more balanced, but in many areas it remains difficult to retain IT staff due to the compressed salary structures of colleges and universities. Further, recent graduates are unfamiliar with legacy programming languages. To close this gap of technical needs and available talent, some institutions have established internal development programs to ensure a steady supply of interested and trained IT professionals. Others have purchased packaged systems and rely on external consultants to lead implementation efforts.

Matching institutional practice with technical features is another decision point; most likely there will be a mismatch. Should institutional practice match the capabilities of the IT system, or should custom IT solutions be developed to meet the service needs? With the former, changing the institutional culture is at best difficult, and at worst divisive. With the latter, the institution loses the leverage of maximizing future system growth and enhancements unless corresponding

modifications are made to custom software modifications. There are more than 3,600 colleges and universities in the United States. Even if grouped by similar size, mission, and objectives, perspectives on the delivery of student systems are diverse. Individual institutions differ on student expectations, learning environments, academic and administrative policies, academic advising, and the role of faculty governance. The combination results in a high degree of uniqueness among institutions. Well-designed vendor-supplied student services recognize these variables and make some provisions for flexibility. Yet, there are practical limitations on the flexibility of any software.

Another decision involves the current IT infrastructure, including databases, enterprise-wide servers, midtier servers, authentication and authorization services, e-commerce support, Web development, data warehouse capabilities, and help desk availability. Are the multiple campus systems interfaced to greater or lesser degrees? Does the institution have common or varied business practices for admission, financial aid disbursement, and grade reporting? These business process and IT components combine to provide a launch point for the future development of student services.

Success Depends on People and Culture

Nearly a decade ago, Penn State began moving toward a new way of processing applications for admission. The traditional glossy view-book and multipage paper application were replaced with electronic versions. This effort initially involved technologies that are now obsolete. As the Web emerged, the development process quickly migrated to its current technology base.

When this initiative began in the mid-1990s, the goal was to receive at least 80 percent of all applications electronically before the year 2000. Although not reached by 2000, the goal has since been surpassed. The goal may have been too aggressive, but not from a technology perspective. Adequate technology was available, and the new application process was far superior to the traditional paper-based one. The reason the goal was not reached had little to do with technology, but it had a lot to do with people. When a Penn State prospect sought advice from a high school counselor, the counselor would advise the prospect to contact Penn State and request a copy of the admission application. When the prospect asked for parental advice, the response was to complete a traditional paper application. If an interested prospect called the admissions office and asked for an application, the response was that an application would be mailed. These responses reflected

tradition. It took a concerted effort to change the culture away from a paper-based mentality, enabling the goal to be reached.

Technology provides the ability to dramatically improve the delivery of student services, yet it can be intimidating—a source of fear, uncertainty, resistance, and avoidance. Such emotions and responses cannot be ignored. To realize the effectiveness and efficiencies of technological change, attention must be focused on the larger context of these services and the constituents involved with the change. After all, it's not about technology!

Conclusion

The need to provide improved student support services has never been greater. In recent years, the cost of higher education has continued to increase, often outpacing other economic indicators. As tuition increases, external pressures from students, parents, legislators, and alumni to contain costs mount. At the same time, Net Generation students expect improved and comprehensive services from the academy.

The availability of technological solutions for student services has never been greater. The plethora of enterprise-wide solutions, outsourcing opportunities, and on-campus development tools provide a wide range of options for the design and deployment of responsive student services.

Although the delivery of student services is not about technology, it is about using technology wisely. The use of technology requires a strong partnership between service providers and technologists. The Net Generation's expectations for student services are high and rising. The opportunities for us to respond to—and even exceed—these expectations are equally boundless.

About the Author

J. James Wager currently serves as assistant vice provost for enrollment management and university registrar at The Pennsylvania State University. He provides oversight for all academic records and associated activities for the university's 80,000-plus student enrollment at 24 campuses across the Commonwealth of Pennsylvania, leadership on enrollment management, and deployment of student system applications. Wager also spends time in the classroom teaching management courses and is a member of the university's faculty senate. He has been an active member of the American Association

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